

CAT4101AGEVB

CAT4101 LED Driver Evaluation Board User's Manual



ON Semiconductor®

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EVAL BOARD USER'S MANUAL

Introduction

This document describes the CAT4101AGEVB evaluation board for the ON Semiconductor CAT4101 low dropout current sink. The functionality and major parameters of the CAT4101 can be evaluated with the CAT4101AGEVB board.

The CAT4101 is a low dropout current sink capable of driving strings of high-brightness LEDs up to 1 A. The current sink is programmed by a single resistor from the RSET pin to GND. Enable and dimming control is available via the EN/PWM pin. Additional details and electrical characteristics can be found in the CAT4101 data sheet.

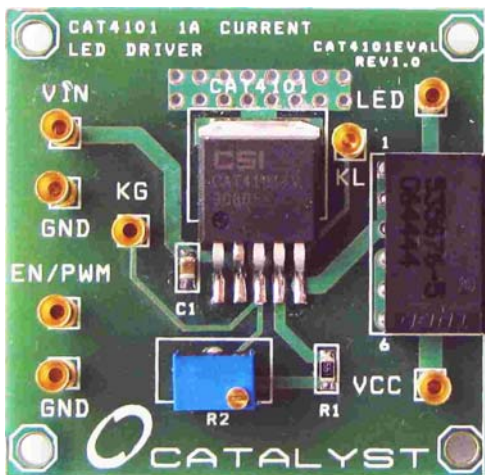


Figure 1. CAT4101AGEVB Board

Board Hardware

The evaluation board contains one CAT4101 in a typical application circuit. A six pin header receptacle is available to connect strings of LED modules. If LED modules are not available, a separate LED string can be used by connecting the cathode end to the LED test point.

The VIN test point is connected to the VIN supply of the CAT4101. The voltage between test points VIN and GND should not exceed 6.0 V.

The EN/PWM test point is the enable and PWM input for the CAT4101. The control signal should be connected between test points EN/PWM and GND.

Trimmer potentiometer R2 can be adjusted to change the LED current. The RSET pin of the CAT4101 is a fixed 1.2 V reference and the LED current is set by changing the current through the RSET resistor (R1 + R2).

The CAT4101 has a typical dropout voltage of 500 mV for 1 A LED current. To measure the dropout there are kelvin connections at test points KL and KG. These connections allow for accurate measurement of the LED pin voltage. At high current, there could be a significant voltage drop across board traces. These test points should be used for measurement purposes only as they are not meant to carry any current.

CAT4101AGEVB

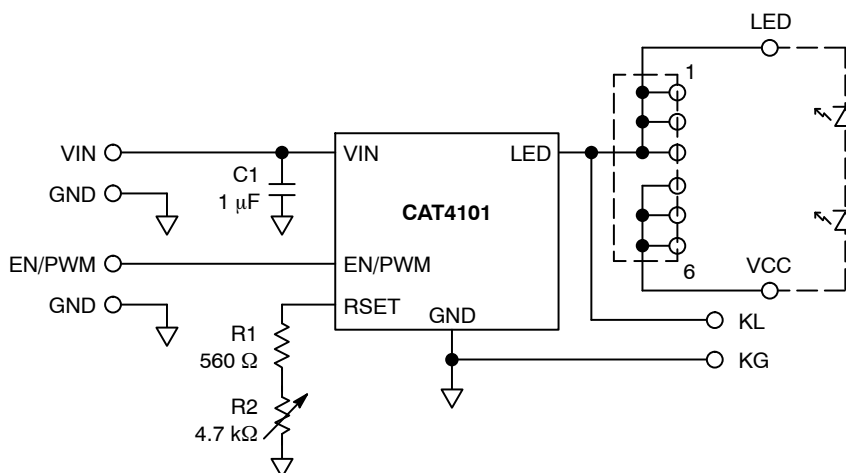



Figure 2. CAT4101AGEVB Board Schematic

Table 1. CAT4101AGEVB BOARD LIST OF COMPONENTS

| Name | Manufacturer | Description | Part Number | Units |
|------|------------------|--|------------------|-------|
| U1 | ON Semiconductor | Low Dropout Current Sink, TO-263-5 | CAT4101TV | 1 |
| C1 | Taiyo Yuden | Ceramic Capacitor 1 µF/10 V, 10%, X7R, Size 0805 | LMK212B7105KD-T | 1 |
| R1 | Yageo | SMT Resistor 1/8 W, 560 Ω, Size 0805 | RC0805FR-07560RL | 1 |
| R2 | Vishay | Trimmer Potentiometer, 4.7 kΩ | T63YB472K | 1 |
| | Tyco | 6 Pin Header Receptacle 0.1" Pitch | 535676-5 | 1 |

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